California Monthly Climate Summary
August 2010

Weather Highlights

August 2010 was a cooler than average and a drier than average month for California. According to the Western Region Climate Center's California Climate Tracker, the statewide monthly average temperature was 71.0°F which is 0.9°F lower than the long-term average. With a statewide average of 0.07 inches, precipitation for August was only 20.1% of the long term average.

August 2010 began with a low pressure system spinning off shore which combined with monsoonal moisture spawned showers and thunderstorms across the crest of the Sierras and eastward. Onshore flow kept most of the state's temperatures cooler than normal. The low pressure continued to hang out offshore in week 2 keeping temperatures at or below normal inland and well below normal on the coast as a deep marine layer moved onshore. Temperatures remained mild in week 3 with some drizzle falling on the North Coast. Ridging finally made an appearance across California in the fourth week sending temperatures to record highs across the state. This was short-lived though as another low pressure system moved onshore dropping temperatures below normal and causing some scattered showers in the Sierra. The month ended with another low pressure system moving over northern California causing some rainfall and thunderstorm activity over mountainous regions.

Preliminary records, reported on the National Weather Service Record Event Report, shows that statewide there were 149 temperature records tied or broken and 1 precipitation record tied or broken for the month. Of the 149 temperature records set in August, 52 were for new high maximum temperatures while 48 were for new low maximum temperatures. Records were set over 25 days of the month. The only precipitation record was on August 5th in Santa Maria where the 0.01 inches that fell tied the 1973 record. As for temperatures, August 24th saw new all time August high maximum temperatures set in San Francisco and Monterey. San Francisco reached 98°F which broke the 2003 record of 89°F while Monterey hit 96°F smashing the old record of 83°F set in 2003 as well. August 25th was hot across the state as records were set in 5 of the 10 forecast areas. On this day Sacramento reached 108°F which broke the 1988 record of 105°F. Redding reached 110°F which broke the old record of 108°F set in 1988. Stockton reached 108°F which broke the 1999 record of 103°F. Lancaster reached 107°F breaking the 1985 record of 106°F. Sandberg reached 96°F breaking the 1985 record of 95°F. Needles, CA set a high minimum temperature record on the 25th with a reading of 92°F. The old record was 90°F set in 2007. The all time August high minimum temperature for Needles is 95°F set in 1969.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 46 stations recorded a minimum temperature below freezing in August, while 141 stations reached or exceeded 100°F at least once during the month. Statewide extremes from the CDEC network of temperature gages are shown below. Also shown are the monthly average extremes from the CIMIS network. A

table of regional average minimum, mean, and maximum temperatures from the CDEC and CIMIS networks is also shown at the end of the summary.

Precipitation in July was below average across the state. For the CDEC precipitation gages for August 2010, the largest amount of precipitation recorded was the Cedarville in the North Lahontan Region with 0.63 inches. This is 225% of the average precipitation for this station for August. At the other end of the spectrum, 53 stations reported zero inches of precipitation for the month. For the CIMIS network, Big Bear Lake in San Bernardino County topped the precipitation charts with 1.06 inches for the month and 81 stations recorded no precipitation. Some CIMIS gages may show large precipitation totals if the gages are not covered during irrigation activities so care should be given to review precipitation data used from this network. The 8-Station Index for northern California precipitation recorded 0.09 inches in August with 3 days showing precipitation. On average, 0.3 inches of precipitation is recorded for the 8-Station index in August. Statewide, the average precipitation for August was 15% of the long-term average based on the California Data Exchange Center (CDEC) gages. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document.

CoCoRaHS Update

August 2010 continues California's second year with CoCoRaHS – the Community Collaborative Rain, Hail and Snow Network. This group uses citizen volunteers to record rain, hail and snow data. The users enter the data online at the CoCoRaHS web site. The web site provides the opportunity to see spatial detail of rain and snow patterns in participating states. As of the end of August 2010, California has 672 volunteers signed up spanning 51 of California's 58 counties. The county with the most volunteers at the end of August is Sonoma with 85 volunteers. For the month of August, 6,207 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in August was in San Bernardino County with 1.32 inches recorded on 8/26/10. No hail reports were submitted in August. To join CoCoRaHS or find more information, please visit http://www.cocorahs.org.

Snowpack and Water Supply Conditions

The latest water supply index forecast for 2010 shows the Sacramento Basin in the Below Normal category and the San Joaquin Basin in the Above Normal category. Water year 2009 resulted in a Dry category for the Sacramento Basin and Below Normal for the San Joaquin Basin. Water supply information for California can be found at http://cdec.water.ca.gov/water_supply.html. A historical listing of water year categories for both basins can be found at http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST.

Drought Monitor and Seasonal Outlook

The maps for California's depiction by the Drought Monitor for July 27, 2010 and August 31, 2010 are shown below. The Drought Monitor maps can be found on the National Drought Mitigation Center's (NDMC) website http://drought.unl.edu/dm/.

These maps are largely a reflection of precipitation and soil moisture deficit estimates. As of the August 31st depiction, California is depicted in either D0 (abnormally dry), D1 (moderate drought), or D2 (severe drought) conditions. Drought conditions are now limited to the northeast corner of the state and along the California Oregon border. Drought free area in California was 85.4% for the depiction on August 31st. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for September through November from NOAA depicts California with persisting drought conditions in the remaining drought areas as depicted by the Drought Monitor. This forecast is based on climatology. Updates are provided twice per month. Maps and information can be found at http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html.

The California Nevada River Forecast Center has produced some drought monitoring tools for California. These tools look at the frequency associated with precipitation deficits for the Northern California Eight Station Index and the San Joaquin Five Station Index. Another tool looks at the frequency of end-of-month storage for select reservoirs in California. The frequencies of the observations are related to the Drought Monitor's drought categories D0 through D4. These tools can be found at http://www.cnrfc.noaa.gov/climate.php. For July, the Eight Station Index is in drought free conditions for both the 12-month period and for the 24 month period. The Five Station Index is drought free for both periods as well.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as La Niña conditions. Equatorial sea surface temperature anomalies for the tropical Pacific continued to cool through August. The end of August Nino 3.4 sea surface temperature anomaly was -1.5°C. The June through August 3-month running mean of the Ocean Niño Index (ONI) is -0.6°C which is the first ONI value for this episode to qualify for a La Niña event. Four more values below the -0.5°C threshold are needed for an episode to qualify as a La Niña event. Most forecast models have the tropical sea surface temperatures continuing to cool and La Nina conditions to persist through the first part of 2011. More information can be found at the Climate Prediction Center's web site: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ Updates are posted weekly. The latest three month outlook (September through November) from NOAA indicates a higher probability of above normal temperatures for the southern third of the State and equal chances elsewhere. For precipitation, the State has a higher probability of below normal precipitation for the eastern half of the state extending out to the coast from Santa Barbara southward. The remainder of the state has equal chances of above or below normal precipitation with the exception of the northwest coast which has a higher probability of above-normal precipitation. Outlook plots and discussions can be fount at http://www.wrcc.dri.edu/longrang/. General weather information of interest can be found at http://www.noaawatch.gov/. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

August 2010 saw more crops maturing and being harvested. Cotton bolls set and were opening and rice continued to head out. Sunflower fields began to be defoliated as harvest began. Peaches, nectarines, and plums continued to be harvested while prune harvest got started. Lemon harvest was nearing completion while Valencia oranges continued to be picked. Table grape harvest began while raisin grapes continued to develop. Strawberry fields were being prepped for fall planting. Some varieties of almonds began to be harvested in the Central Valley while walnut orchards continued to develop well. Spraying for coddling moth and husk fly continued. Summer vegetable season at farmer's markets reached their peak while Imperial County prepared for fall planting of vegetables. Melon harvest along with onions, garlic, eggplant, green beans, squash and peppers were all being harvested across the state. Rangeland continued to deteriorate with fire danger increasing with the hot weather. However, compared to last year at this time, rangeland conditions are in better shape due to the cool summer. Dairy cows were cooled with fans and misting during the extreme heat. Bees were in sunflower, melon, and some vegetable fields. For further crop information see http://www.nass.usda.gov/index.asp.

Other Climate Summaries

California Climate Tracker (new product of Western Region Climate Center)
Golden Gate Weather Service Climate Summary
NOAA Monthly State of the Climate Report

Statewide Extremes (CDEC)

High Temperature – 121°F (Buttercup, Colorado River Desert)
Low Temperature – 5°F (Casa Vieja Meadows, Tulare Basin)
High Precipitation – 0.63 inches (Cedarville, North Lahontan)
Low Precipitation – 0 inches (53 stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 118^0F (UC San Luis, Imperial County)
Low Average Minimum Temperature – 41.5^0F (Alturas, Modoc County)
High Precipitation – 1.06 inches (Big Bear Lake, San Bernardino County)*
Low Precipitation – 0 inches (81 stations)
*Sometimes irrigation water from sprinklers gets counted as precipitation if the gage is not covered.

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Aug	Oct-Aug	Stations	Aug	Oct-Aug	Aug	Oct-Aug
North Coast	0.27	5	4	4	19	8	8	14.9%	104%
SF Bay	0.03	2	1	1	6	1	1	0.0%	118%
Central Coast	0.06	3	2	2	11	2	2	0.0%	118%
South Coast	0.06	3	2	2	15	8	7	0.0%	109%
Sacramento River	0.26	5	4	4	43	16	15	20.6%	103%
San Joaquin River	0.12	6	6	6	25	11	11	2.9%	118%
Tulare Lake	0.07	5	4	5	28	21	21	16.5%	118%
North Lahontan	0.04	3	3	3	14	6	5	65.7%	92%
South Lahontan	0.06	3	3	3	15	8	8	4.7%	137%
Colorado River	0.03	1	1	1	6	2	2	29.0%	147%
Statewide Weighted Average	1	36	30	31	182	83	80	14.66%	111%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	30	42.2	65.5	94.1
SF Bay	19	49.3	64.2	90.1
Central Coast	34	48.8	63.3	83.7
South Coast	68	50.1	71.8	97.7
Sacramento	88	44.4	69.1	97.1
San Joaquin	75	46.6	68.8	93.2
Tulare Lake	19	34.4	61.0	86.4
North Lahontan	23	35.2	58.9	81.4
South Lahontan	19	44.5	69.3	90.0
Colorado River Desert	22	69.9	90.9	108.4
Statewide Weighted Average	397	44.5	67.5	93.4

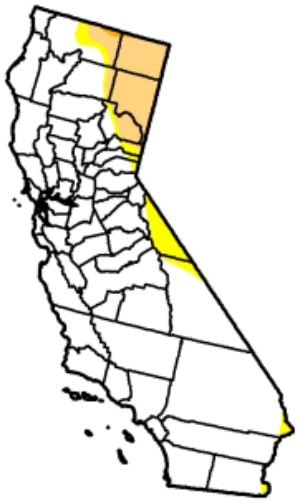
U.S. Drought Monitor

California

July 27, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	87.5	12.5	8.1	0.2	0.0	0.0
Last Week (07/20/2010 map)	87.8	12.2	8.1	0.2	0.0	0.0
3 Months Ago (05/04/2010 map)	72.8	27.2	9.9	7.1	0.0	0.0
Start of Calendar Year (01/05/2010 map)	6.6	93.4	72.8	9.0	0.0	0.0
Start of Water Year (10/06/2009 map)	0.0	100.0	73.4	45.8	0.0	0.0
One Year Ago (07/28/2009 map)	2.5	97.5	72.8	44.3	0.0	0.0



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

http://drought.unl.edu/dm

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Author: D. Miskus, CPC/NOAA

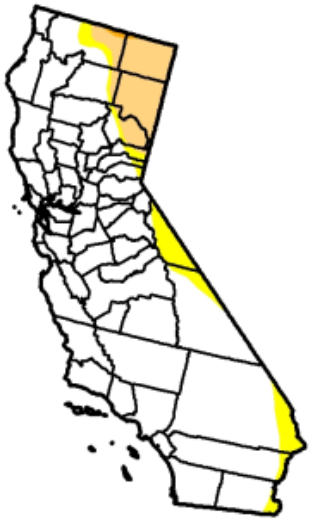
U.S. Drought Monitor

California

August 31, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	85.4	14.6	8.1	0.2	0.0	0.0
Last Week (08/24/2010 map)	85.4	14.6	8.1	0.2	0.0	0.0
3 Months Ago (06/08/2010 map)	88.0	12.0	8.1	6.0	0.0	0.0
Start of Calendar Year (01/05/2010 map)	6.6	93.4	72.8	9.0	0.0	0.0
Start of Water Year (10/06/2009 map)	0.0	100.0	73.4	45.8	0.0	0.0
One Year Ago (09/01/2009 map)	0.0	100.0	73.4	45.8	0.0	0.0



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http://drought.unl.edu/dm

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Author: Brad Rippey, U.S. Department of Agriculture